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Society of Philadelphia, the Proceedings of the Essex Institute, the Boston Journal of Natural History, and the Annals of the Lyceum of Natural History of New York.—EDS.

NATURAL HISTORY CALENDAR.

NEW ENGLAND REPTILES IN APRIL.—The month of gladsome sounds has come! The little "pee-weep-ing" Tree Toads, with their high-pitched whistling notes, will soon convince you of the fact, if you are so fortunate as to live without the city walls; for on the first balmy evening, when Nature seems to open her heart and voice, you will be strongly impelled to stroll beyond the limits of your recent walks, and be you ever so stoical, you cannot close your ear to the joyous sounds that will rise from every swamp, ditch, and pool.

Yes! the little Tree Toads have left their winter homes, and come forth to announce in joyful chorus that Spring is here; that the cold and dreary days are over, and to bid us welcome the bright and happy ones to come.

Let us accept the invitation and visit the spot where the little revellers of night invite us so cordially. With what joy do they seemingly anticipate our coming—what music to the sympathetic ear. Hark! ten thousand little throats are sounding their welcome. We are near them. Hush! all is still.—One timid, cautious note, *peep*, strikes our ears, and, regardless of prospective colds, we seat ourselves on the damp bank resolved to see the little musician; assuring the little pipers by our quiet and attentive attitude that we will listen to their song of joy and greeting. *Peep, peep*, comes from a spot not far away. Another *pee-e-p*, still nearer; then *pee-weep, pe-weep, pe-weep, pe-weèp, pe-wèep*, and the chorus is at its height. The thousand invisible musicians are satisfied that we love their sounds. Move not or all will be hushed; for these little minstrels are jealous of their right to a quiet audience, and to enjoy their music that right must be respected. Observe that miniature wave circling from that spear of grass quite near the bank; look closely there, and you will see a little pointed head rise cautiously above the water, and then,—*pee-weep*. Yes! there is one of the little fellows! and we return home gladdened by their music, and contented that we have discovered the character of these happy little choristers of spring, and have found them to be our little summer friends of the woods, instead of Turtles, as we have from our youth been told.

During the first week in this month, the Little Tree Toads (*Hyla*

Pickeringii Le Conte) will be out in abundance, and about the 10th or the 15th their eggs may be found attached singly to the floating vegetation; never in strings or masses, as is the case with all our other toads and frogs. In about twelve days the young are hatched, and are much further advanced in the tadpole state, than in our other species of frogs and toads, which do not have distinct tails, well marked heads, and the power of free locomotion for several days after they are hatched, and therefore remain during that period in the gelatinous mass surrounding the eggs; but the eggs of the Little Tree Toad not being provided with this jelly-like substance, the young are forced to swim about in search of food, as soon as they leave them, and are, therefore, more perfectly adapted to their period of "fish-life" from the first.

The peculiar half-grunts, half-croaks of the Wood Frogs (*Rana sylvatica* Le Conte) are first heard, generally, about the middle of the month in ponds or even temporary pools of water. In a few days their eggs are laid in masses about three inches in diameter, attached to spears of grass, and they leave the water for their summer abode in the damp and shady woods. The eggs are hatched in about six days, and the tadpoles, rapidly developing, attain the form of adults by the time the temporary pools are dry.

The Common Toads (*Bufo Americanus* Le Conte) usually appear from the 15th to the 20th of April, when their peculiar low trilling notes are heard in every direction for a month or two afterwards. Their eggs are laid in long double strings, from about the 20th of April to the middle of May, and often even as late as June, owing, probably, to the great distance many of the Toads have to travel in order to reach the water. The tadpoles are commonly hatched ten days after the eggs are laid.

The Spade-footed Toads (*Scaphiopus Holbrookii* Baird) are more uncertain in their appearance, being governed entirely by the dampness or dryness of the season, and are only found in isolated localities. Often appearing by the middle of this month, they may not, on a following year, come forth until a long summer's rain has made temporary ponds. Their appearance may be delayed even to the middle or last of July, and frequently several years will pass without their being noticed at all. When they do appear, it is always suddenly and in immense numbers. They remain but a day or two in the water, disappearing as mysteriously as they came; leaving behind them thousands of eggs, in bunches of from one to three inches in diameter. Generally these bunches are attached to spears of grass, though they were once observed floating freely in a temporary pond. The tadpoles come forth in about six days after the eggs are laid, and their growth

is very rapid, not more than two or three weeks elapsing before the young toads leave the water. The peculiar, harsh croaking of this singular toad must be heard to be appreciated, and can then never be confounded with that of any other species. The only sound we can liken it to is that of a heavily loaded, creaking wagon rolling over hard and uneven ground.

About the last of the month we have found singular bands of eggs, several inches in length, each band consisting of three irregular rows of eggs, which we have taken to be those of the large Tree Toad (*Hyla versicolor* Le Conte), whose low monotonous rolling note is heard throughout the summer, but we have never been able to confirm the supposition. The eggs collected did not solve the question, as all the tadpoles which were hatched from them in the course of five days, died before they exhibited the characters of any toad or frog with which we were acquainted; though in the tadpole state they were very much like the tadpoles of *Hyla Pickeringii*.

The other species of Frogs found in Massachusetts do not lay their eggs before May or June, though they all appear from the first to the middle of the month, and their various notes and peculiar croaks add much to the lively chorus of Spring. They are the Spotted Frog, Marsh Frog, or Pickerel Frog (*Rana palustris* Le Conte); the second species of Spotted Frog, Marsh Frog, or Field Frog (*Rana halecina* Kalm); the Green Frog (*Rana clamitans* Daudin); and the Bull Frog (*Rana Catesbyana* Shaw).

The several species of Salamanders (improperly called "Lizards") are also to be found either in water, or under stones and logs, in wet, or damp and shady localities, each according to its peculiar habits, but they do not lay their eggs until later in the season. The Turtles and Snakes also creep from their winter retreats, and are to be seen on bright sunny days endeavoring to warm their cold bodies after their long winter sleep.—F. W. P.

Ornithological Calendar for April. 1st to 10th.—The Pine and Yellow Redpoll Warblers, Ruby-crowned Kinglet, the Woodcock, Killdeer Plover; the Great Blue and Night Herons, the Bitterns, the Kingfisher, the Fish Hawk, Sharp-shinned, Cooper's and Sparrow Hawks commonly begin to make their appearance. Snow Birds, Song, Fox-colored and Tree Sparrows are more abundant than at any other period of the year. The last of the winter visitors are retiring. Geese and Ducks are passing in flocks to the northward.

10th to 20th.—During this time appear the Hermit Thrush (*Turdus Pallasi* Cab.), White-bellied Swallow, and the Golden-winged Woodpecker or Wakeup. Chipping, Field and Savanna Sparrows arrive; also, the Willet; the Tell-tales; the Least, Semipalmated, Solitary and

Spotted Sandpipers, Wilson's or English Snipe, Golden and Field Plovers. The Fox-colored and Tree Sparrows, Snow Birds, Pine Finches and Shore Larks mostly disappear, passing northwards. Robins, Song Sparrows, Carolina Doves, Meadow Larks, the Crow, and the smaller Hawks pair.

20th to 25th.—The Wood Thrush (*Turdus mustelinus* Gm.), the Purple Martin, Brown or Tit Lark, White-throated and White-crowned Sparrows, Virginia and Common Rails, the Marsh, Sooty and Wilson's Terns, the Green Heron and the Little Bittern arrive; some of them scarcely halting in their passage northward.

25th to 30th.—The Chewink or Towhee Bunting, Barn Swallow, Chimney Swift, Cat Bird, Black and White Creeper, Yellow-bellied Woodpecker, Least Flycatcher, Warbling and Solitary Vireos and the Whip-poor-will begin to arrive; not usually becoming common until a week or ten days later. Blue Birds, Robins, Grass Finches, Field and Song Sparrows, and Kingfishers are now nesting, or have occasionally even commenced incubation.—J. A. A., *Springfield, Mass.*

The Insects of Early Spring.—In April the Gardener should scrape and wash thoroughly all his fruit trees, so as to rub off the eggs of the Bark Lice which hatch out early in May. Many injurious caterpillars and insects of all kinds winter under loose pieces of bark, or under matting and straw at the base of the trees. Search should also be made for the eggs of the Canker Worm and the American Tent Caterpillar, which last are laid in bunches half an inch long on the terminal shoots of many of our fruit trees. A little labor spent in this way will save many dollars' worth of fruit. The "castings" of the Apple Tree Borer (*Saperda bivittata*) should be looked for at the base of the tree, and its ravages be promptly arrested. Its presence can also be detected, it is said, by the dark appearance of the bark, where the grub is at work; cut in and pull out the young grub. It is the best time of the year to catch and kill this pest. Cylindrical bark borers, which are little round black weevil-like Beetles, often causing "fire-blight" in pears, etc., are now flying about fruit trees to lay their eggs; and many other weevils and boring-beetles, especially the Pea Weevil (*Bruchus pisi*), the Pine Weevil (*Pissodes strobi*), and *Hylobius pales* and *Hylurgus terebrans*, also infesting the pine, now abound, and the collector can obtain many species not met with at other times.

The housewife must now guard against the intrusion of Clothes' moths (*Tinea*), while many other species of minute moths (*Tineids*), and of Leaf-rollers (*Tortricidæ*), will be flying about orchards and gardens just as the buds are beginning to unfold; especially the Coddling Moth (*Carpocapsa pomonella*). On warm days myriads of these and other insects may be seen filling the air; it is the busiest time of their

lives, as all are on errands of love to their kind, but of mischief to the Agriculturist.

When the May Flower—"O commendable flowre and most in minde" —blooms, and the willows hang out their golden catkins, we shall hear the hum of the wild bee, as it

"Murmurs the blossomed boughs around,
That clothe the garden's southern bound,"

and the insect hunter will reap a rich harvest of rarities. Seek now on the abdomen of various wild Bees, such as Andrena, for that most eccentric of all our insects, the Stylops Childreni.* The curious larvæ of the Oil Beetle, *Meloe*, may be found abundantly on the bodies of various species of Bombus, Andrena and Halictus, with their heads plunged in between the segments of the bee's body.

The beautiful moth, *Adela*, with its immensely long antennæ, may be seen, with other smaller moths, feeding on the blossoms of the willow. The Ants wake from their winter's sleep and throw up their hillocks, and the "thriving pismire" issues from his vaulted galleries constructed in some decaying log or stump, while the angle worms emulate their six footed neighbors. During the mild days of March, ere the snow has melted away—

"The dandy Butterfly
All exquisitely drest,"

will visit our gardens. Such are various kinds of Vanessa, Grapta and Melitæa. The beautiful *Brephos infans* flies before the snow disappears.

"The Gnat, old back-bent fellow,
In frugal frieze coat drest"

will celebrate the coming of Spring, with his choral dance. Such is *Trichocera hyemalis*, which may be seen in multitudes towards twilight on mild evenings. Many Flies are now on the wing, such as Tachina and its allies, the four spotted Musquito, *Anopheles quadrimaculatus*, and the delicate species of Chironomus, whose males have such beautifully feathered antennæ, assemble in swarms. Now is the time for the collector to turn up stones and sticks by the river's side and in grassy damp pastures, for Ground Beetles (*Carabidæ*), and to frequent sunny paths for the gay Cicindela and the Bombylius Fly, or fish in brooks and pools for water Beetles and various larvæ of Neuroptera and Diptera; while many Flies and Beetles are attracted to freshly cut maples or birches running with sap; indeed many insects, rarely found elsewhere, assemble in quantities about the stumps of these trees, from which the sap oozes in March and April.—A. S. P.

*See an account of this curious insect in the Proceedings of the Essex Institute, vol. 4, p. 130. 1865.